



"Brodeur, Brian (DEP)"  
<Brian.Brodeur@state.ma.us>

08/23/2006 08:58 AM

To Mark Voorhees/R1/USEPA/US@EPA

cc

bcc

Subject RE: % impervious factors and LU

History:

✉ This message has been replied to and forwarded.

\*\*\*\*\* For Interagency Policy Considerations only  
\*\*\*\*\*

Hi Mark:

I have attached a the avenue script that calculates imperviousness from the attribute table of a land use map. Most importantly the header for that script documents the methodology through which these coefficients were derived. I actually had an undergraduate researcher digitize the impervious portions of enough randomly selected polygons for each land use so the standard deviation stabilized. It is important to remember they are coefficients for land use polygons as they are delineated in the MassGIS land use coverage. Imperviousness for a residential area includes all the streets. It is not a value for a individual residential lot.....

The following exert from the script populates a data structure called a dictionary in this case called the "Idic" and each line sets a value. The numbers in the parenthesis are the land use code and the percentage imperviousness expressed as a decimal respectively. The single quote flags the rest of the line as a comment

```
IDic.set(1,0.03)      'cropland
IDic.set(2,0.02)      'Pasture
IDic.set(3,0.02)      'Forest
IDic.set(4,0.00)      'wetland
IDic.set(5,0.02)      'mining
IDic.set(6,0.06)      'open land
IDic.set(7,0.10)      'part rec
IDic.set(8,0.20)      'spec rec
IDic.set(9,0.17)      'water rec
IDic.set(10,0.46)     'res multi
IDic.set(11,0.35)     'res high den
IDic.set(12,0.19)     'res med den
IDic.set(13,0.15)     'res low den
IDic.set(14,0.01)     'salt wetland
IDic.set(15,0.77)     'commercial
IDic.set(16,0.65)     'industrial
IDic.set(17,0.21)     'urban open
IDic.set(18,0.66)     'transport
IDic.set(19,0.03)     'waste disp
IDic.set(20,0.02)     'water
IDic.set(21,0.02)     'woody perennial
```

Rather than keep this informal feel free to cite it formally. I consider it published through MassGIS as part of their watershed tools. If you have any questions, feel free to ask.

Ciao  
B

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-----Original Message-----

From: voorhees.mark@epamail.epa.gov  
[mailto:voorhees.mark@epamail.epa.gov]  
Sent: Tuesday, August 22, 2006 5:36 PM  
To: Brodeur, Brian (DEP)  
Subject: % impervious factors and LU

Hi Brian -

Could you send me the estimated % impervious values for the land cover categories.

Much appreciated.

Mark



table\_im.ave